








**Table S4:** Glycans with AUP significantly increased in the tumor-adjacent tissue cores compared to the tumor tissue cores.

| Observed m/z | Proposed Glycan Structure   | Composition             | P value    |
|--------------|---|-------------------------|------------|
| 1743.5816    |    | Hex8HexNAc2             | 1.3848E-05 |
| 1581.5279    |    | Hex7HexNAc2             | 2.6587E-05 |
| 1339.4736    |    | Hex3HexNAc4             | 0.0008810  |
| 2758.9686    |    | Hex8HexNAc7             | 0.004078   |
| 1136.3952    |    | Hex3HexNAc3             | 0.004984   |
| 2267.7479    |   | Hex5HexNAc4NeuAc2 + 2Na | 0.03492    |
| 1419.4753    |  | Hex6HexNAc2             | 0.03505    |